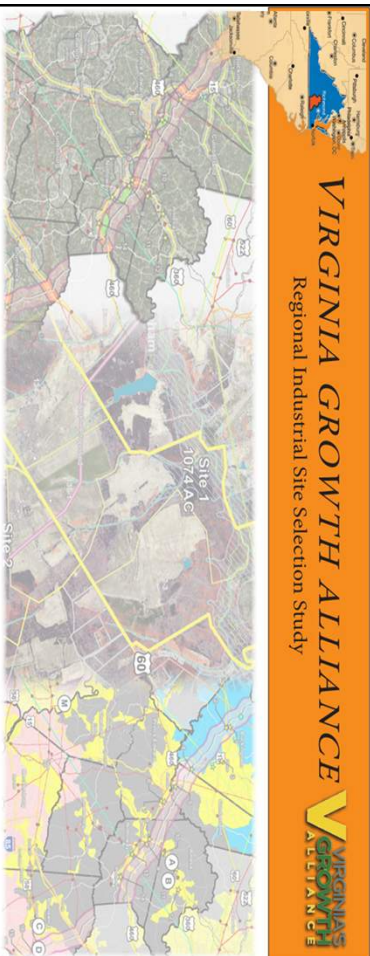


Leveraging Global and Regional Infrastructure for Economic Development Success



April 5, 2019

By: Joseph C Hines, PE, MBA

Principal – Economic Development & Infrastructure



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Overview / Agenda

- ✓ Overview of Timmons Group
- ✓ Trends in Economic Development & Site Selection
- ✓ Global & Regional Infrastructure Assets
 - Energy Infrastructure
 - Electrical Infrastructure
 - Digital Infrastructure
 - Port Infrastructure
 - Railroad Infrastructure
- ✓ Preparing for Economic Development Success



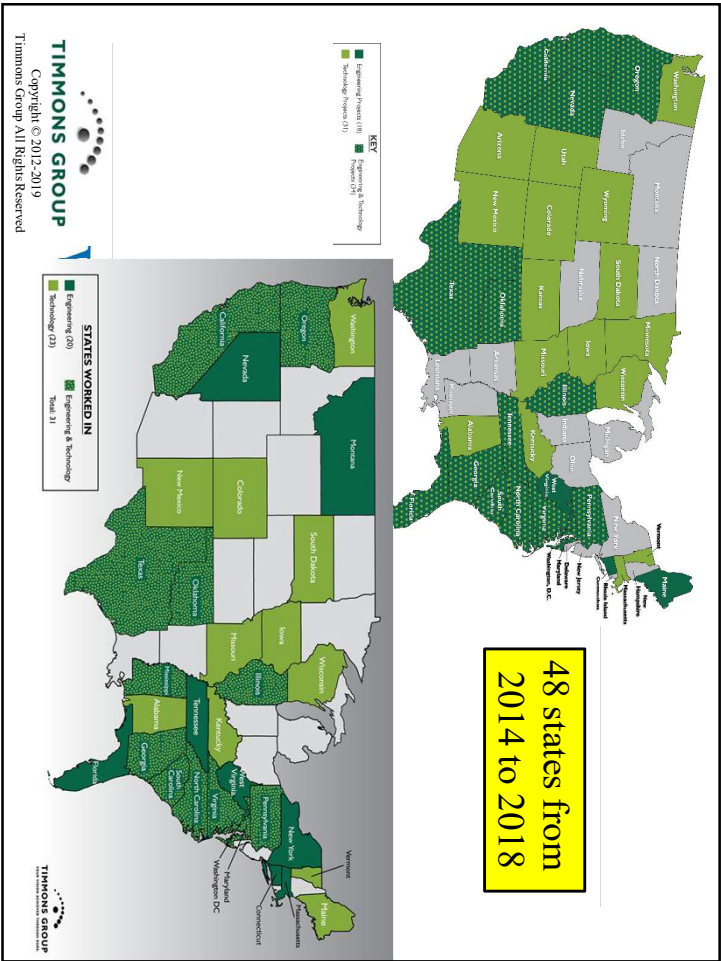
About Timmons Group

- ✓ Virginia based Consultant Engineering Firm
- ✓ Chesterfield Headquarters w/ 7 Virginia offices
- ✓ Employ 390+ Virginians (67% of all employees)
- ✓ Engineering News Record's Top 500 Design Firms for 26+ years
- ✓ Extensive experience with economic development, master planning, site & infrastructure development and GIS site selection



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48 states from
2014 to 2018



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What drives Prospect Location Decisions?

- ✓ Access to Markets
- ✓ Workforce
- ✓ Logistics Infrastructure
- ✓ Transportation Costs
 - Rail
 - Drayage for Trucking
 - Shipping Costs
- ✓ Total Costs of Ownership (TCO)
 - Energy Costs
 - Electrical & Natural Gas
 - Utility Costs
 - Tax Rates
 - Capital Investment



Virginia is at the crossroads of access to three major markets...

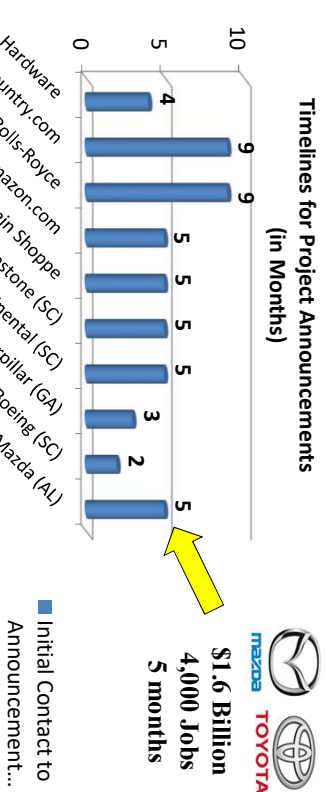
5

Trends in Economic Development & Site Selection A Consultant's Perspective....

- ✓ Logistics & Workforce Analysis Completed First
 - ✓ Prospects & consultants look at **STATES & REGIONS**, NOT sites or localities
 - ✓ **Speed to market** matters – Projects move in MONTHS, not years
 - ✓ **"Ready to go" & Publicly Controlled Sites Rule**
 - ✓ **Incentives do matter**, AFTER you become a FINALIST
 - 100% of your success is 70-80% out of your control...**
- Control what you can – your Sites and Infrastructure!**

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How fast are prospects moving?



\$6.5 billion investment & over 14,000 jobs
Avg \$5 Billion investment, 1,400 jobs and 5 months!

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“Pre-Prospect” Planning vs. “Post-Prospect” Execution

“Pre-Prospect” Planning: Remove as many unknowns / development obstacles as practical & address all potential development scenarios (timing & costs) to give you best odds of success to close the deal

- Due Diligence (Site Eliminators)
- Master Planning Process & Build-out Analysis (Maximum Footprint & Build-out)
- Align Infrastructure & Site Requirements with Target Industries
- Definition of Site & Infrastructure Development Costs
- Timelines for Implementation (Ideally 12 months or less)
- Address Cultural Resource & Permitting Issues up-front



“Post-Prospect” Execution: Respond to Prospect inquiries within 48-72 hrs and show how the site & infrastructure can work for their project

- 3D Visualization & Site Schematics
- Responsiveness to RFI's
- Deal Closing

**Infrastructure planning is key to
Economic Development Success**

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Site Selection Magazine Site Selectors' Top Location Criteria - 2016

Rank	Location Factor
1	Existing Workforce Skills
2	State and local tax scheme
3	Transportation Infrastructure
4	Utility Infrastructure
5	Land / Building prices & supply
6	Ease of permitting & regulatory procedures
7	Flexibility of Incentive Programs
8	Right-to-work State
9	Availability of incentives
10	Access to higher education resources

Source: Site Selection Survey of Corporate RE Executives 2016

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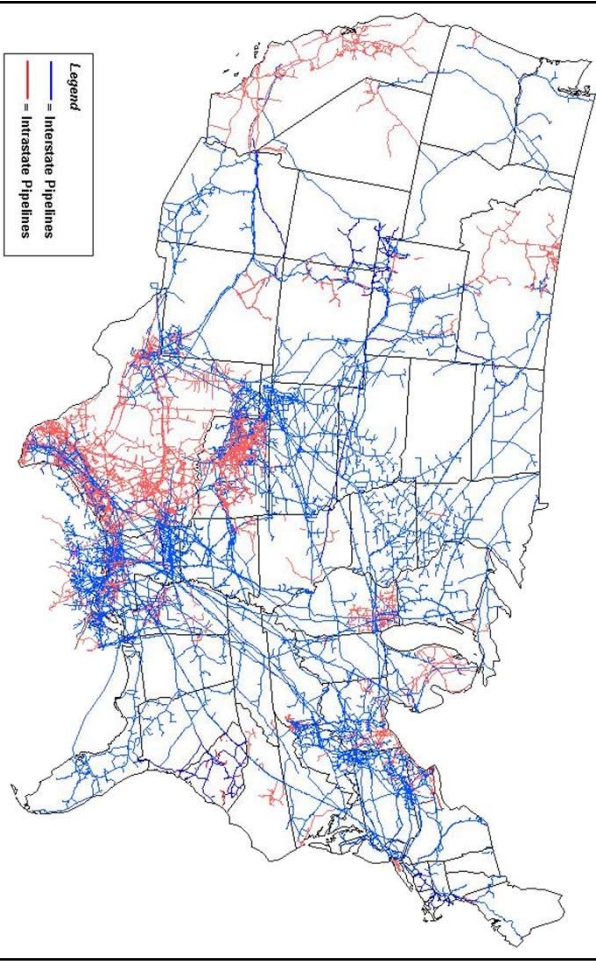
The Infrastructure Big Picture & How does it impact Economic Development Success?

- ✓ Energy Infrastructure
 - Natural Gas Pipelines
- ✓ Electrical Infrastructure
 - Electric Service Territories
- ✓ Digital Infrastructure
 - Va Beach Cable Landing Station
 - Fiber Infrastructure
- ✓ Port Infrastructure
 - East Coast Ports
 - Virginia Port Authority
- ✓ Railroad Infrastructure
 - Precision Railroading
 - NS Heartland Corridor & CSX National Gateway



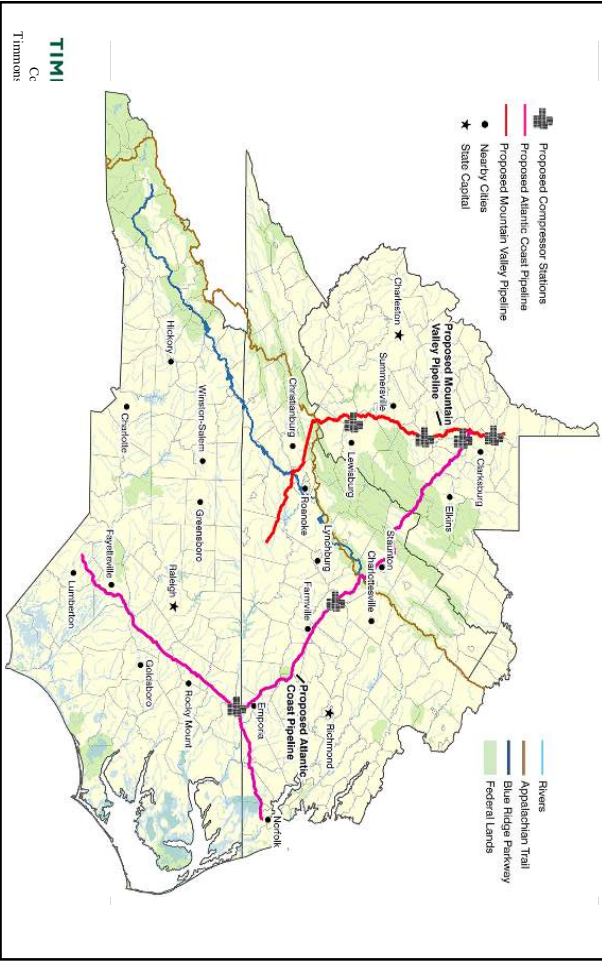
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Natural Gas Pipelines in US
Virginia has minimal coverage relative to US



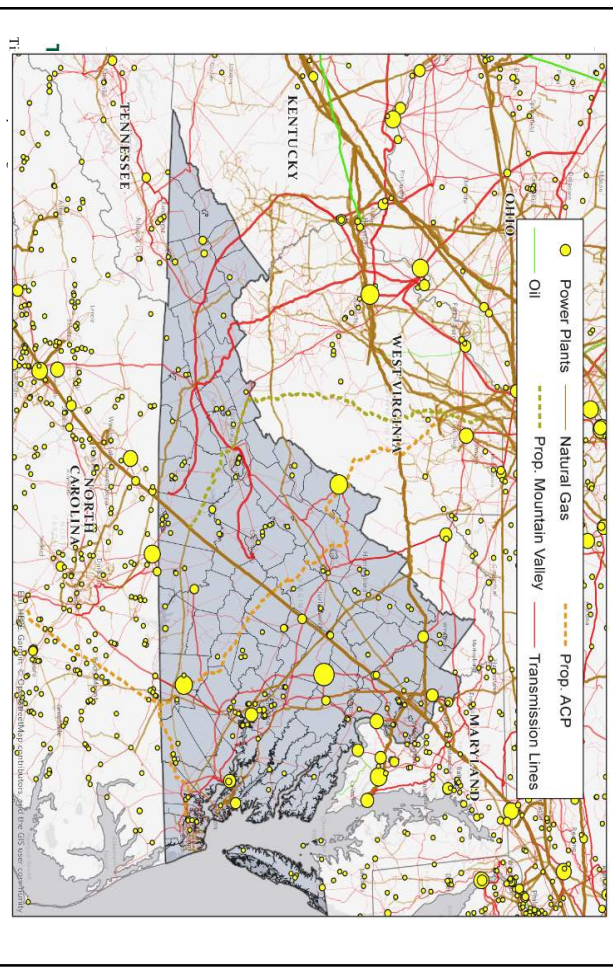
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Mountain Valley & Atlantic Coast Pipeline Projects



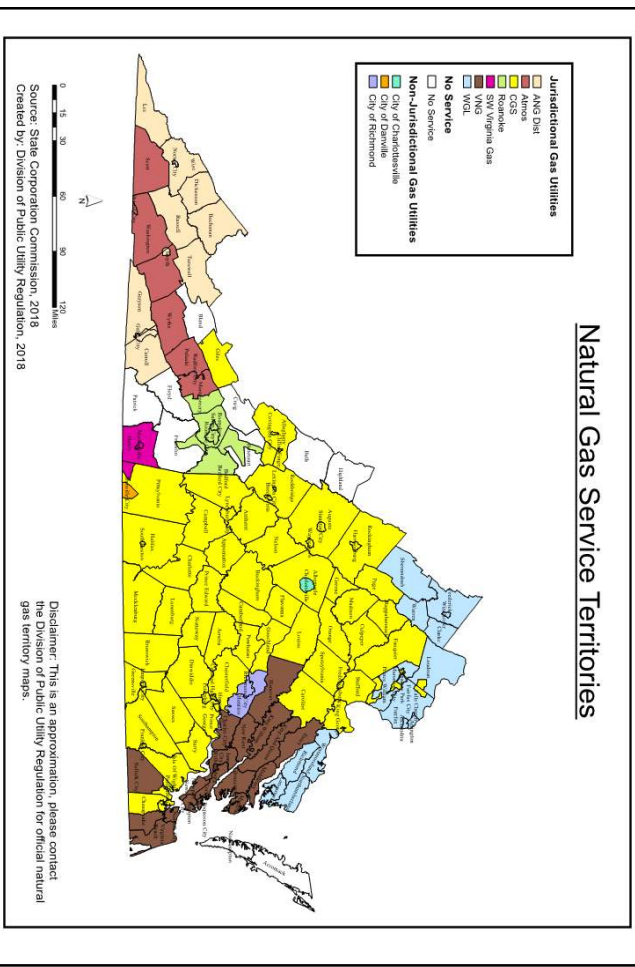
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Regional Energy Infrastructure & Power Plants



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Natural Gas Service Territories in Virginia



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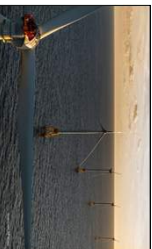
Virginia Offshore Wind

Market Opportunity

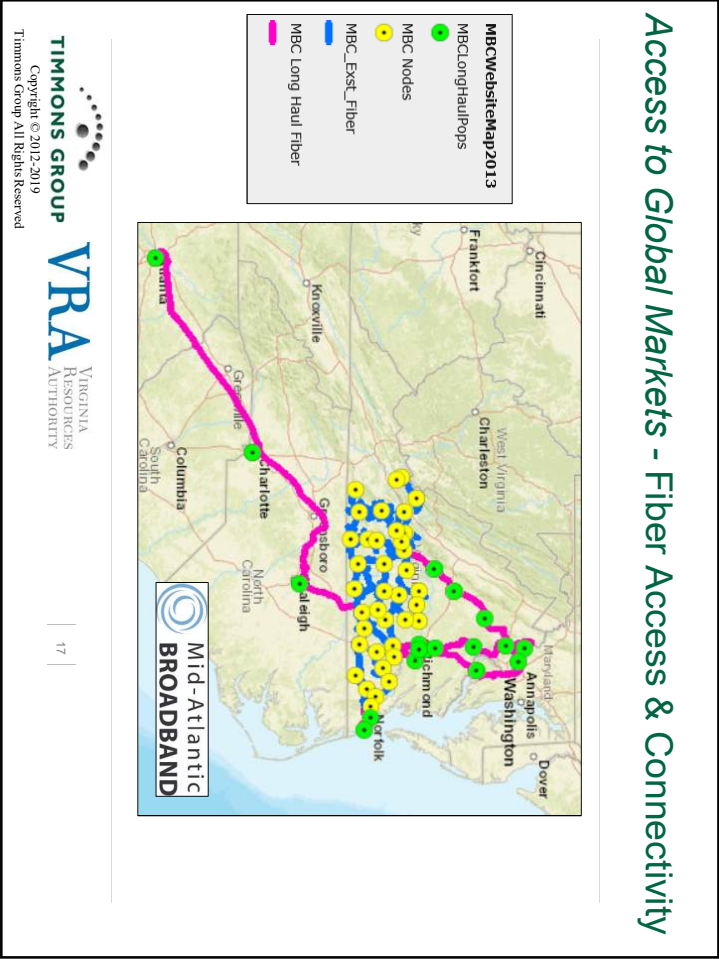
Jacket Foundation Fabrication Facility

Direct Investment: \$70 – 130 million
Direct Jobs: 500 – 550
Indirect Jobs: 1,070 – 1,180
Induced Jobs: 1,270 – 1,400
Required Site Area: 30 – 50 acres
Develop Timeline: 3 – 5 years
Jacket Production: 50 – 100 per yr
Jacket Market: 2,500 to 3,500 *

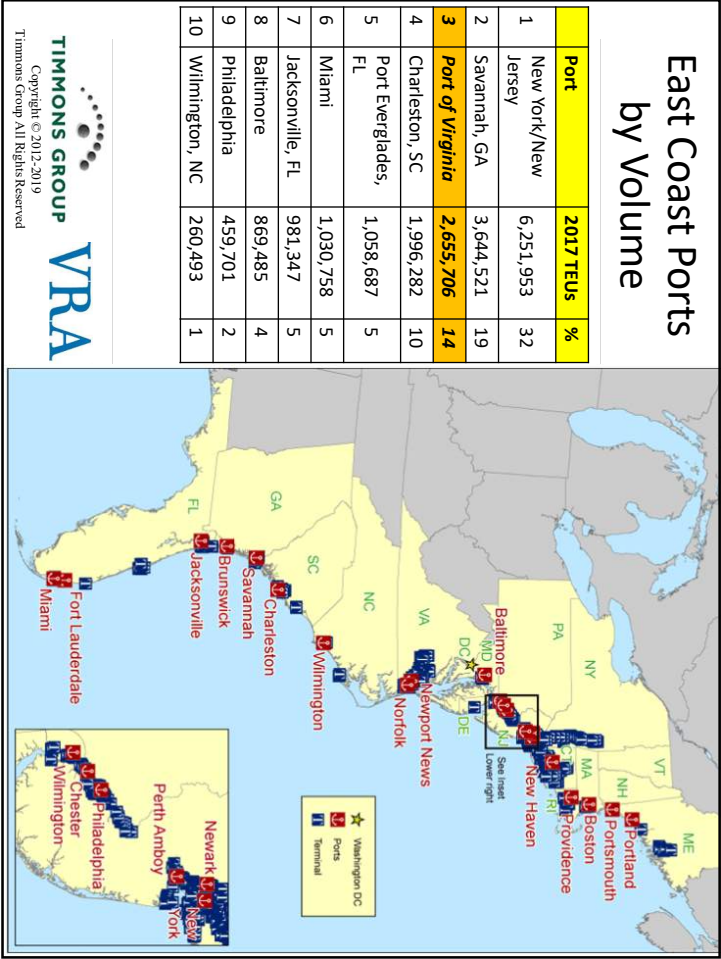
* Estimates based on existing facilities in Europe
* Assuming full build-out of all Mid-Atlantic
offshore wind commercial lease areas



Access to Global Markets - Fiber Access & Connectivity



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The Port of Virginia *Driving Economic Growth on the East Coast*



- ✓ Panama Canal Expansion – Opened on June 26, 2016

BOXSHIP EVOLUTION: 1996-2016

1996
REGINA MAERSK
7,400 TEU



BOXSHIP EVOLUTION: 1996-2016



2016
CMA CGM BENJAMIN FRANKLIN
18,000 TEU

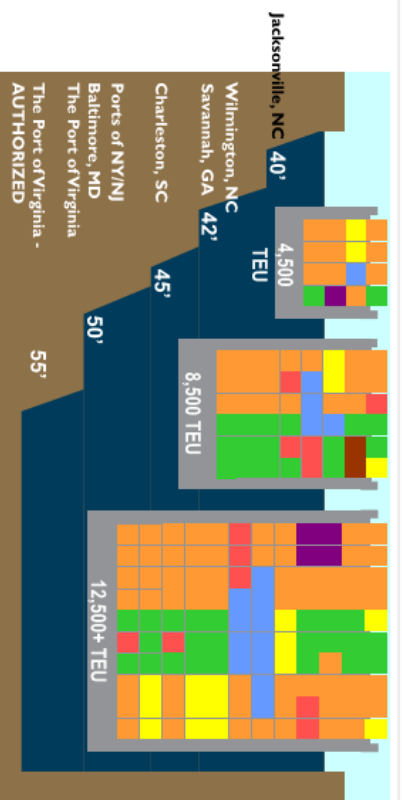


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Port of Virginia's Competitive Advantage

EAST COAST PORT DEPTHS



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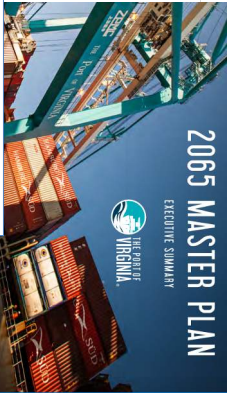
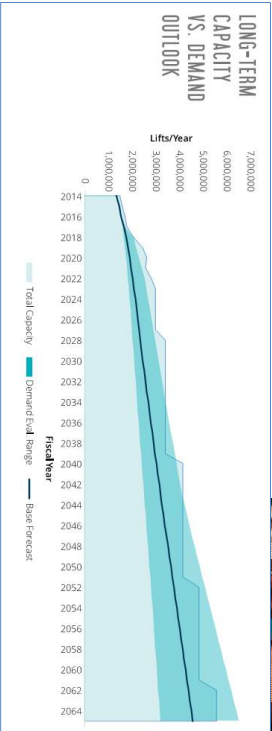


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Port of Virginia Growth

- 2017 – Approx 2.84 million TEU's
- 2065 – Approx 6.5 million TEU's



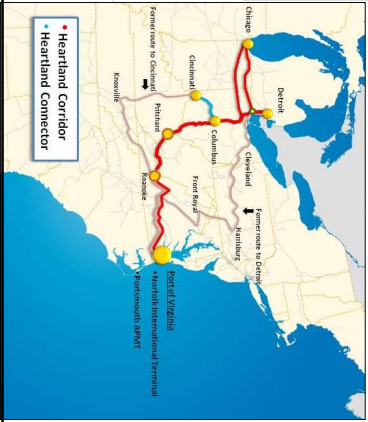
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CSX National Gateway & NS Heartland Corridor

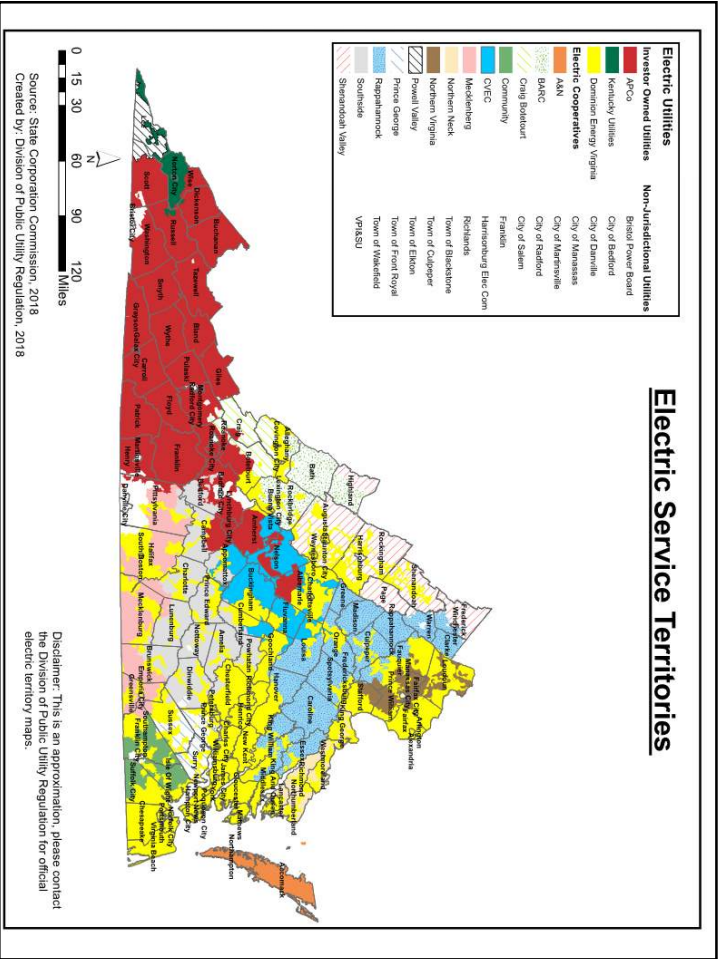


[CSX]

NS
NORFOLK SOUTHERN®



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Elec Providers Coverage		
Dominion – 26.2%		
AEP – 24.9%		
Rappahannock – 9.9%		
Southside – 7.6%		
Shenandoah Valley – 6.1%		
Notable:		
NOVEC – 1.7% (Data Centers)		
		
		
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Electric Provider in Virginia	Service Area (Sq Mi)	% of Virginia
Dominion	10,413	26.2%
APCO	9,884	24.9%
Rappahannock	3,957	9.9%
Southside	3,016	7.6%
Shenandoah Valley	2,426	6.1%
Metcklenburg	1,809	4.5%
CV/EC	1,609	4.0%
BARC	1,290	3.2%
Craig Botetourt	773	1.9%
Community	679	1.7%
Northern Virginia	678	1.7%
Prince George	587	1.5%
ANEC	552	1.4%
Northern Neck	478	1.2%
Kentucky Utilities	438	1.1%
City of Danville	431	1.1%
Powell Valley	382	1.0%
City of Bedford	122	0.3%
Bristol Power Board	120	0.3%
Franklin	37	0.1%
Harrisonburg Electric Cooperative	18	0.0%
City of Salem	14	0.0%
City of Martinsville	11	0.0%
Town of Front Royal	10	0.0%
City of Manassas	8	0.0%
City of Radford	7	0.0%
Town of Culpeper	7	0.0%
VRPSU	6	0.0%
Town of Blackstone	5	0.0%
Richlands	3	0.0%
none	1	0.0%
Town of Elkton	1	0.0%
Town of Wakefield	1	0.0%
Grand Total	39,773	100.0%

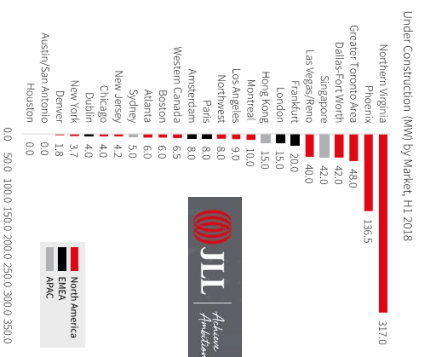
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Data Center Market Drivers & Trends

- Major Power Providers
- Power Availability
 - Short term (12 months)
 - Long-term (18+ months)



Strong demand for new facilities spurs new construction in Phoenix and Northern Virginia. Demand from cloud providers continues to be a driver in new supply.



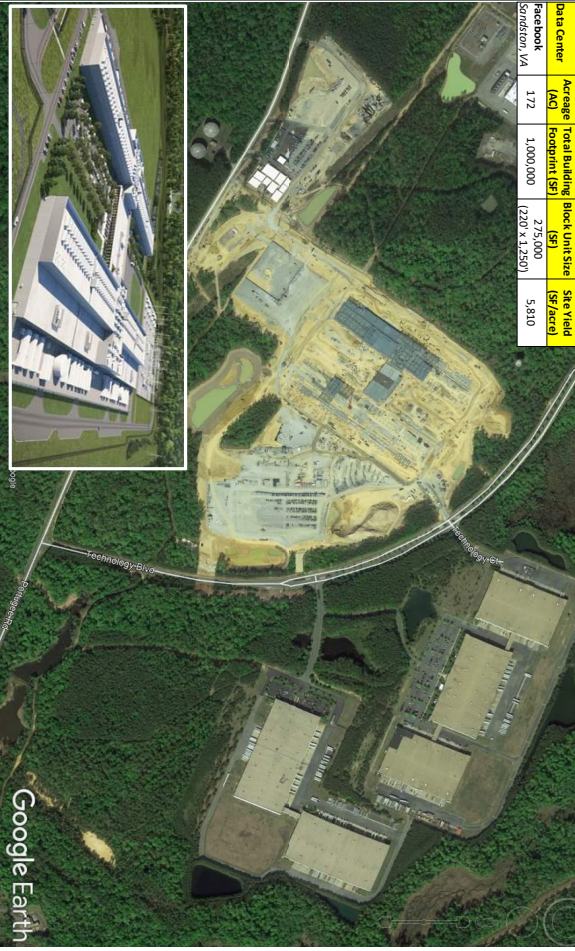
Data Centers & Solar Farms (Apple in NC)



Facebook Data Center – Henrico, VA



Data Center	Acres	Total Building Area (sq ft)	Plot/Lot Size (sq ft)	Site Yield (sq ft/Acre)
Facebook	172	1,000,000	275,000	5,810
Sonneton, VA			1220' x 1,250'	



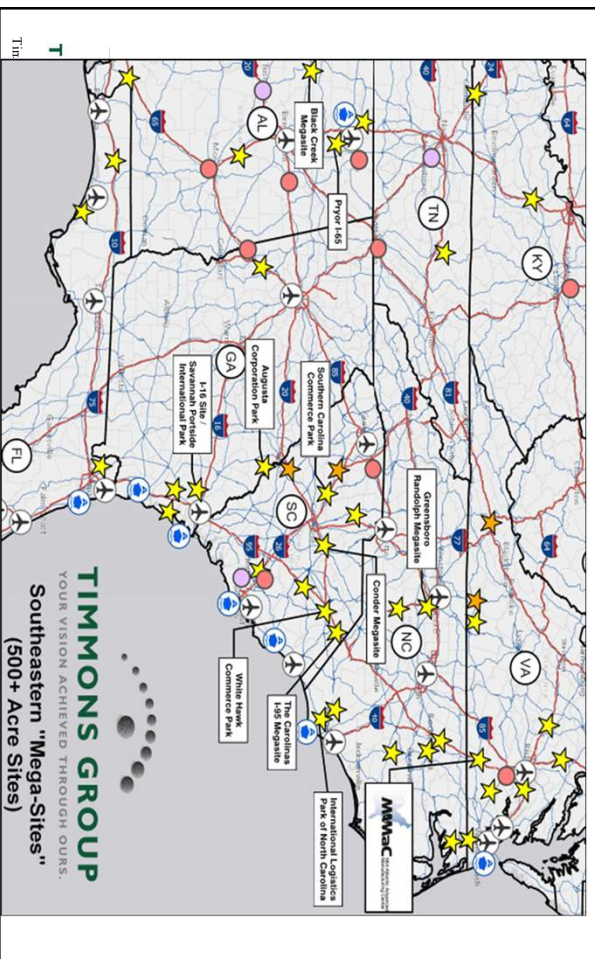
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2019 Legislation that could help infrastructure...

- HB1840 (Marshall), which allows a pilot program to **facilitate construction of electric transmission facilities to Business parks**
- SB 1695 (Wagner) and HB 2738 (Bagby) which allows **acquisition of rights-of-way for economic development sites for public utilities (Applies to multiple utilities – NG, power, etc.)**

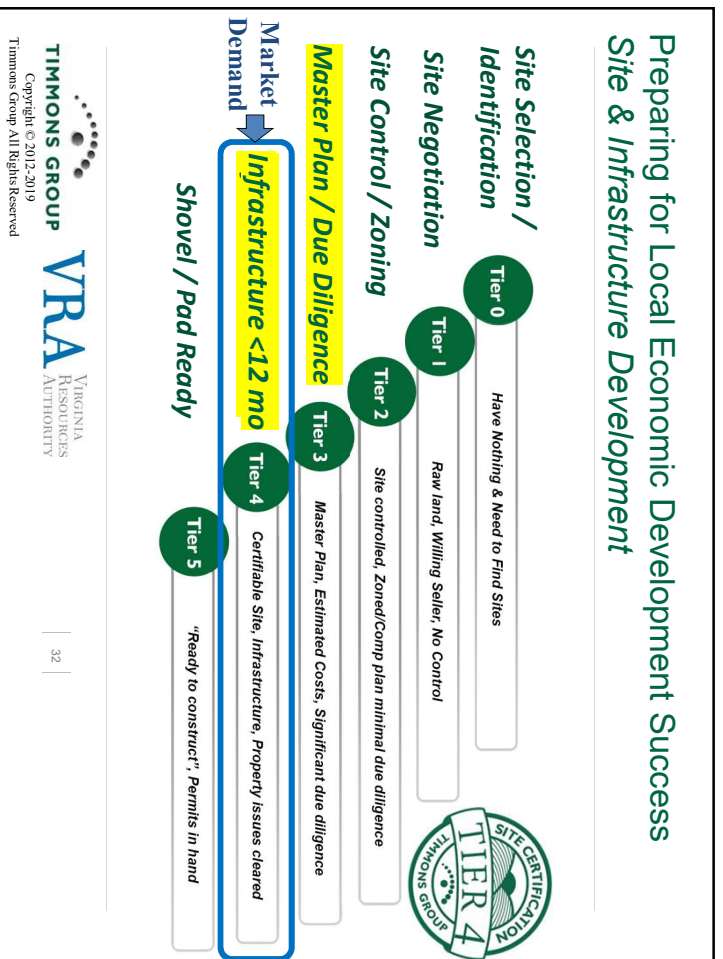
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Virginia Mega-Sites vs. Southeastern Mega-Sites

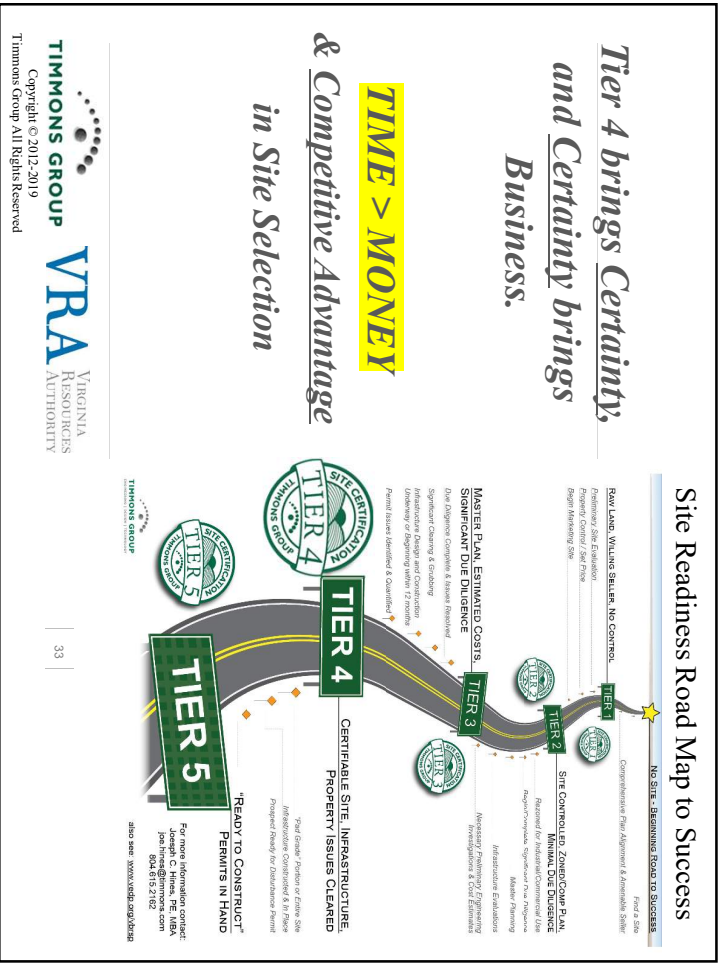


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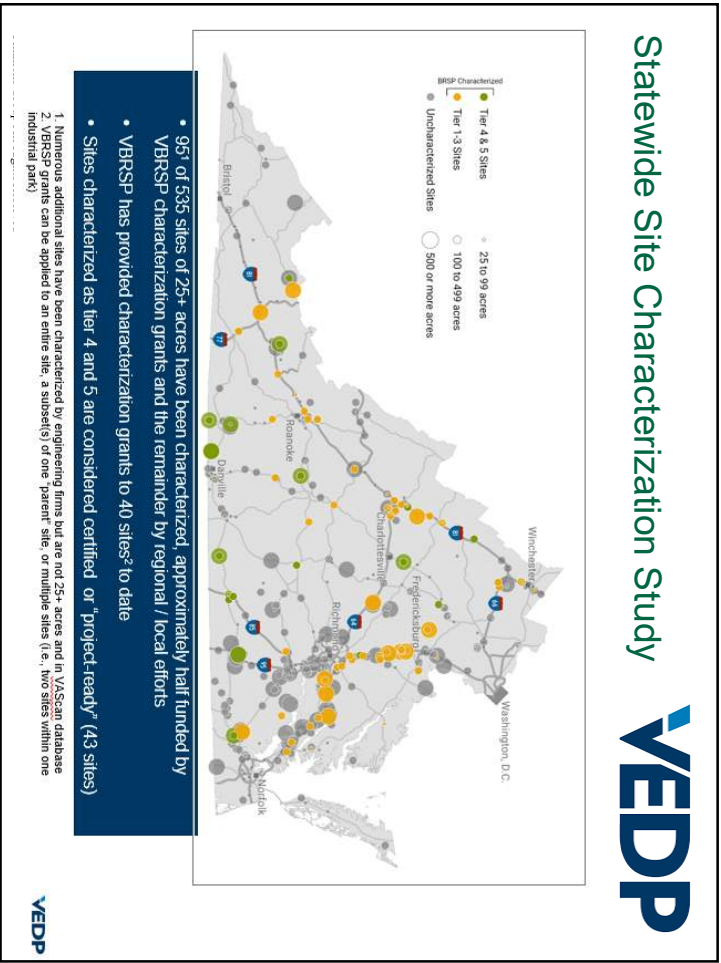
Preparing for Local Economic Development Success Site & Infrastructure Development



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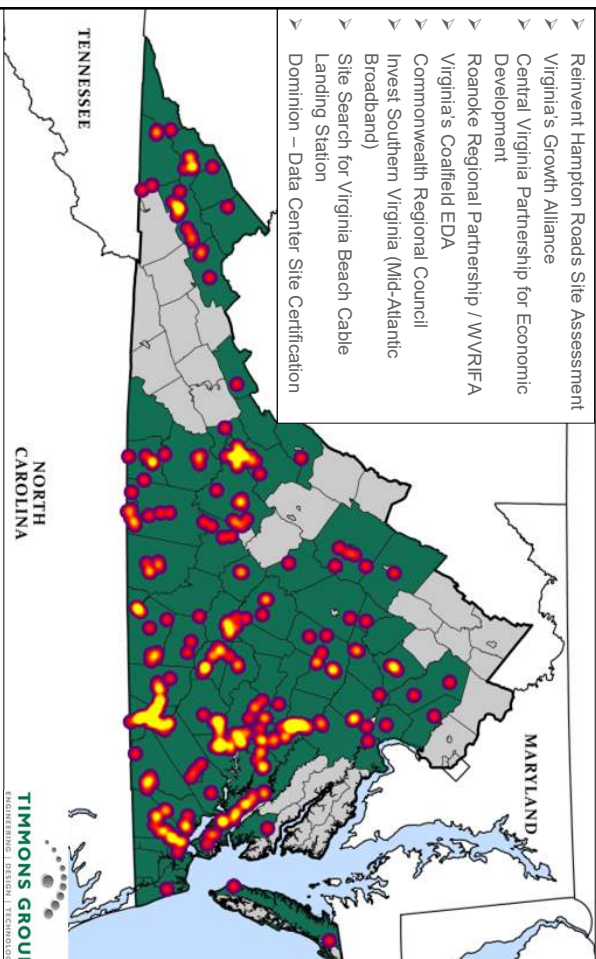
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What can you do? GIS Site Selection Studies & Site Evaluations

- Reinvest Hampton Roads Site Assessment
- Virginia's Growth Alliance
- Central Virginia Partnership for Economic Development
- Roanoke Regional Partnership / WVR/FA
- Virginia's Coalfield EDA
- Commonwealth Regional Council
- Invest Southern Virginia (Mid-Atlantic Broadband)
- Site Search for Virginia Beach Cable Landing Station
- Dominion – Data Center Site Certification



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Target Markets & Potential Investment

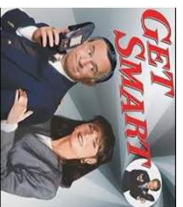
Industry Type	\$ per SF Investment	Traffic Demand	Water Demand	Wastewater Demand	Power Demand
Logistics / Distribution	\$100-200	Med - High	Low	Low	Low
Food Processing	\$300-500	Med	Med - High	Med - High	Med - High
Advanced Mfg / Bio	\$450-700	Med	Low - Med	Low - Med	Med - High
IT / Data Centers	\$1,000-1,200	Low	Med - High	Low - Med	High
Wood Products					
-Wood Conversion		Low	Med - High	Med - High	Low - High
-Wood Processing		Low - Med	Low - Med	Low - Med	Low - Med
-Dimensional Lumber		Med	Low	Low	Med - High

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Smart Test Fits - Making the Connection between Site Build-Out Capacity to Potential Tax Revenue

Industry	Building Size or Acreage Range	Single or Multi-Story	Traffic Demands	Water Demands ⁽¹⁾	Wastewater Demands	Power Demands	Natural Gas Demands
Business / Financial Services	20k-SE to 100k-SE	Multi	Low-Med	Low	Low	Low-High	None-Low
Transportation & Logistics							
Information Tech / Data Centers							
Chemicals & Plastics							
Light Mfg / Adv Mfg							

(1) Most industries require a minimum fire storage



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Gap & Build-out Analysis Leads to Potential Tax Revenue Generated

Number	Site	Boundary Survey	Subdivision Survey	Phase I ESA	Cultural Resource / Arch Report	TBE Survey	Prelim Geotech Report	Topo Survey	Wetlands Delink Confirmation	Floodplain Study	Utilities on/ near Site	Comments
1	Crown Jewel	Y	N	N	Y	N	N	N	N	N	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
2	DBRO	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
3	Wingspread	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
4	Enterprise Point	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
5	Hendoff Business Park	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
6	Whitehouse Business Park	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
7	Colleen Business Park	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
8	King Property	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
9	King Property	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.
10	Corner Site	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	City has two parcels in the addition survey. Phase I ESA completed in 2006, and all remaining consent items completed under 2003 Phase I ESA. Wetlands delineation completed in 2003. Enclosed, signed copy of Phase I ESA and Boundary Survey available for review. A site search and boundary survey will be recommended.

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Connection to Tax Revenue


- 100 acres can accommodate 1 million SF
- 1 million SF Facility @ \$100 per SF for Real Estate
- \$100 million Investment
- Real Estate Tax Rate: \$0.85 per \$100
- \$850,000 Per Year

Bonding Capacity (20-yr @ 4%): \$11.7 million



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Opportunities & Assets for Virginia

- ✓ Energy Sector - Energy Infrastructure
- ✓ Centralized Access to Major US Markets
 - Northeastern (via I-81, I-64 and I-95)
 - Piedmont Atlantic (Raleigh to Atlanta w/ I-40 & I-85 corridor)
 - Great Lakes Market
 - NS Heartland Corridor
 - CSX National Gateway
 - Transportation Network
- ✓ Access to World Markets
 - Mid-Atlantic Broadband – Va Beach Cable Landing
 - Virginia Port Authority



THE PORT OF VIRGINIA®



Mid-Atlantic BROADBAND



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Communities Successful in Economic Development...

- ✓ Are **Pro-Active** and **Intentional** about **Infrastructure Investment**
- ✓ Understand it's a **Long-term Game**
- ✓ Have a **REGIONAL Economic Development Strategy** and **EXECUTE** the Plan
- ✓ Understand their **Assets and Sites**
- ✓ Understand their **Cost & Revenue Drivers**
- ✓ **Remove RISKS** for Prospects
- ✓ Have "**fast-track**" permitting procedures in place
- ✓ **Plain and simple they "Get it"!**



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Parting thoughts (and quotes)...

*"Luck is what happens when **preparation meets opportunity**"*

Seneca, Roman Philosopher



*"The will to win is not nearly so important as the **will to prepare** to win"*

Vince Lombardi, Green Bay Packers



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What can we do to help?



Thanks for your time!

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Thanks for your time !

Contact info:

Joe Hines, PE, MBA

Principal & Director of Economic Development

joe.hines@timmons.com

804.615.2162 (c)

804.200.6380 (o)

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